

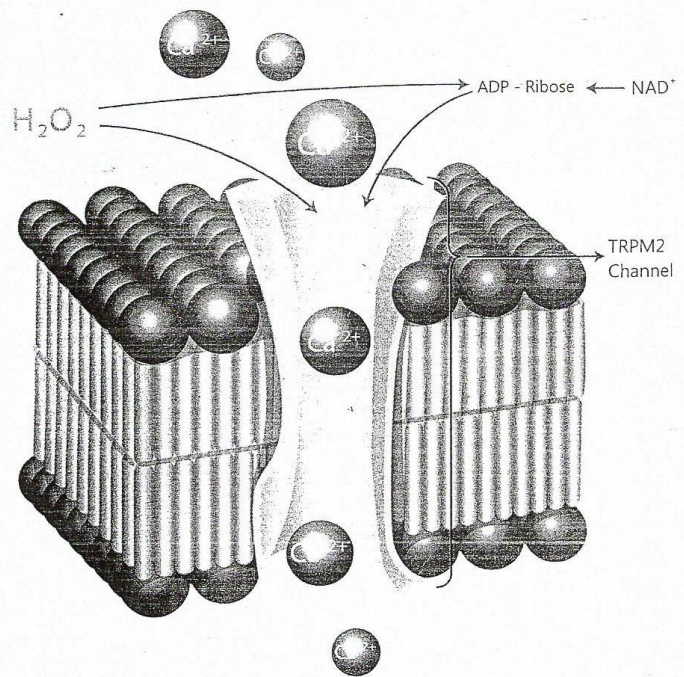
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Cell Membranes and Free Radical Research

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of
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on Calcium Signaling and TRP Channels
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by
Süleyman Demirel University Medical Faculty Department of Biophysics

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AIM AND SCOPE

Cell Membranes and Free Radical Research is a print and
online journal that publishes original research articles, reviews
and short reviews on the molecular basis of biophysical,
physiological and pharmacological processes that regulate
cellular function, and the control or alteration of these pro-
cesses by the action of receptors, neurotransmitters, second
messengers, cation, anions, drugs or disease.

Areas of particular interest are four topics. They are;

A- Ion Channels (Na^+ - K^+ Channels, Cl^- channels, Ca^{2+}
channels, ADP-Ribose and metabolism of NAD^+ , Patch-
Clamp applications),

B- Oxidative Stress (Antioxidant vitamins, antioxidant
enzymes, metabolism of nitric oxide, oxidative stress, the
biophysics of the radicals which springed up from oxygen),

C- Interaction Between Oxidative Stress and Ion Channels
(Effects of the oxidative stress on the activation of the voltage
sensitive cation channels, effect of ADP-Ribose and NAD^+ on
activation of the cation channels which are sensitive to
voltage, effect of the oxidative stress on activation of the TRP
channels)

D- Gene and Oxidative Stress (Gene abnormalities. Inter-
action between gene and free radicals. Gene anomalies and
iron. Role of radiation and cancer on gene polymorphism)

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KEYWORDS

Ion channels, cell biochemistry, biophysics, calcium signaling,
cellular function, cellular physiology, metabolism, apoptosis,
lipid peroxidation, nitric oxide synthase, ageing, antioxidants,
neuropathy.

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TÜBİTAK

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The Abstract book of the congress is published in this issue.

maintenance of GSH and GSH-Px activities, when compared to controls. CAT activity was demonstrated to be significantly higher upon the addition of 2 mM taurine ($p < 0.001$), while the level of MDA increased, indicating oxidative stress in this group. SOD activity was significantly elevated in the group with cysteine, compared to the other groups ($p < 0.001$).

Oral Presentation 10

The Effect of antioxidants on Sperm Parameters, Lipid peroxidation (LPO), Total glutathione (Total GSH) and Antioxidant Potential (AOP) Activities of Post-Thawed bovine Semen

Pınar Peker Akalın¹, M.N. Bucak², P. B. Tuncer², S. Sarıözkan³, N. Başpınar⁴, K. Çoyan⁵, A. D. Ömür⁵

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This study was conducted to determine the effects of methionine, inositol and carnitine on standard sperm parameters, LPO (lipid peroxidation), total glutathione (total GSH) and antioxidant potential (AOP) activities of bovine semen after the freeze-thawing process. Nine ejaculates collected with the aid of an artificial vagina twice a week from each Simmental bovine were included in the study. Each ejaculate, splitted into seven equal groups and diluted in Tris-based extender containing

methionine (2.5 and 7.5 mM), carnitine (2.5 and 7.5 mM), inositol (2.5 and 7.5 mM) and no additive (control), was cooled to 5°C and then frozen in 0.25 ml French straws. Frozen straws were thawed individually at 37°C for 20 sec in a water bath for the evaluation.

The extender supplemented with 7.5 mM doses of carnitine and inositol led to higher subjective motility percentages ($61.9 \pm 1.3\%$ and $51.3 \pm 1.6\%$) compared to the other groups. The addition of methionine and carnitine at doses of 2.5 and 7.5 mM and inositol at doses of 7.5 mM provided a greater protective effect in the percentages of total abnormality in comparison to the control and inositol 2.5 mM ($p < 0.001$). In biochemical parameters, supplementation with antioxidants did not significantly affect LPO and total GSH levels in comparison to the control group ($p > 0.05$). The maintenance of AOP activity in methionine 2.5 mM was demonstrated to be higher (5.06 ± 0.38 mM) than that of control (0.96 ± 0.29 mM) following the freeze-thawing ($p < 0.001$).